Wonder Why?

Introduction

Many of the common chemicals found around the home react in interesting ways. In order to introduce you to a variety of chemical reactions, you will be asked to make observations about numerous chemical reactions involving common houshold chemicals. You may not have thought of these household substances as chemicals since you know them by their trade or common names. In this lab we will refer to all chemicals by a common name if it has one.

STANDARD 3240-01 Students will observe and describe chemical and physical change.

OBJECTIVE
3240-0101 Differentiate between common chemical and physical changes.
3240-0102 Analyze factors that influence chemical and physical change.

INTENDED LEARNING OUTCOMES
1a. Make observations and measurements
2d. Collect and record data using procedures designed to minimize error.
2e. Analyze data and draw warranted inferences.

Materials

- Six containers each containing a different solid:
  - Chalk
  - aspirin
  - fertilizer
  - vitamin C
  - baking soda
  - Alka Seltzer. (Note: make sure that all solids are crushed, and white.)
  -
- Fill five labeled beral pipets with:
  - vinegar
  - ammonia
  - hydrogen peroxide
  - distilled water
  - universal indicator
  - Place bottles containing these five chemicals some where in the classroom so that students can fill their pipets.
- One 24-well micro plate per student
- scoops for placing solids in wells
- plastic stir stick
- Note:
  - It is best to have a set of containers with the solids and pipets for every two students.

Procedure (For the students)

1. **Put on your safety glasses Now!** Place a very small amount of one solid in each well of the first column marked #1 on your micro plate. Do this for each of the remaining solids until each column #1-#6 contains a solid of the same type down the column marked A-D on the micro plate. (See accompanying data table.)

2. Place 5 drops of hydrogen peroxide in all of the wells in row A. Record your results on the accompanying data table after each well reacts. If no reaction occurs, write N.R. Place five drops of vinegar in each of the wells in row B and record you observations. Place 5 drops of vinegar in each of the wells in row C and 5 drops of ammonia in each of the wells in row D and record you observations on the data table.

3. As you observe the liquid and solid mixing, did the solid dissolve, was there any bubbling, smell, or color change.

4. You may need to use the stir stick to completely mix the liquid and solid together to get a complete reaction and to dissolve the solid. Be sure to rinse the stir stick with tap water before you use it to stir another well.

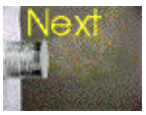
5. **After you have completed and recorded all the reactions**, place one drop of universal indicator into each well. Record each color change in the column labeled "With indicator".

6. Clean all the wells and dry with a q-tip and place in the appropriate place for the next class.

Safety concerns:


Teachers and students, be sure to keep all Chemical and Eye Safety Rules that are specified by your teacher and in all general laboratory experiences.

A Student Page is available for printing using Adobe Acrobat .pdf format.

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